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ABSTRACT

A study was conducted which focused on specific teaching strategies and their impact on shifting externalized students toward internality (change of locus of control), on completion rate, and on increase in knowledge of math over a three-month period. Eight adult education classes with ninety-two students from the north Texas area participated in the project. These classes were assigned to three groups: experimental classes using learning contracts, experimental classes having teachers trained in locus of control concepts, and classes conducted normally serving as a comparison group. Pre- and post-assessments using the adult form of the Nowicki-Strickland Internal-External Scale (ANS-IE) were administered. Additional demographic data were collected with emphases on completion status. The study supported the proposition that contract learning may have an internalizing effect on adults enrolled in adult education programs. Data indicated that simply training teachers with the concepts of locus of control and with implications for teaching has no impact on developing internality among students. (YLB)

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A Study Of The Impact Of Specific Teaching Strategies On Locus Of Control Of Adult Students

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A Study Of The Impact Of Specific Teaching Strategies On Locus Of Control Of Adult Students

A study of adult basic education students in Texas in 1979 (Newsom and Foxworth) revealed that approximately 60% of the clients in selected ABE/GED classes categorized themselves as externally oriented on the Rotter I-E Scale. Of the 42.3% who dropped out, 62.77% rated themselves as externals while 37.4% rated themselves as internals. The results of the 1979 study suggest that changing externals to internal positions may enhance completion rates and extent of learning in a class. To measure this impact, a study was conducted which focused on specific teaching strategies and their impact on shifting externalized students toward internality, on completion rate, and on increase in knowledge of math over a three month period.

OBJECTIVES

The objectives were:

1. To collect pre and post scores of locus of control for a group of ABE-GED clients.
2. To implement selected techniques for changing locus of control toward internality.
3. To identify clients who complete and drop these classes.
4. To analyze information collected to determine which strategies have the most internalizing effect on clients.

DEFINITIONS

Rotter (1966) has defined locus of control in terms of internality and externality. If a person believes that he can change his current situation by his own behavioral acts, he is described as internally oriented. If, however, a person believes that his behavioral acts cannot change or affect his current situation, he is described as externally oriented.

For purposes of this study subjects were grouped into two categories based on exit from the ABE program in December, 1979. Completions were defined as those who either remained in attendance when post assessments were made, achieved their personal goals in the program, or had taken the GED tests. Those who left the program for reasons other than these were counted as incompletes or drops.

METHODS

Subjects

A total of 8 adult education classes with 92 students from the north Texas area participated in the project. These classes were assigned to three groups: experimental classes using learning contracts, experimental classes having teachers trained in locus of control concepts, and classes conducted normally serving as a comparison group. The three groups evidenced no significant differences in ethnic make-up or age ranges.

Procedures

A project research assistant conducted training sessions with teachers on the concepts of Rotter's social learning theory (Rotter, 1954) and implications for working with adult students (Christner, Mink, Washburn, 1975). These teachers administered ANS-IE, the Adult Nowicki-Strickland Internal-External Scale (Nowicki and Duke, 1974), at the beginning of their classes in August-September of 1979 and again in December at the conclusion of the experiment. Additional demographic data were collected with emphasis on completion status in December (see Definitions).

A second group of teachers received specialized training for using learning contracts in math instruction (Appendix A). This teaching strategy adheres to the principles of "learner-oriented instruction" (Mink, 1971). The math contracts require students to set their own learning goals, to identify means of achieving their goals, and to evaluate results. According to Baker (1972) such a systematic approach to instruction should provide students opportunities for developing feelings of internality. Pre and post assessments of the ANS-IE were administered in the same manner as the other classes. In addition to locus of control assessments, the WRAT (Wide Range Achievement Test) math test was used to determine beginning math levels of participants. At the conclusion of the project, math progress was determined either with a post administration of the WRAT math test or by evidence of successful completion of the GED math test.

The third group of adult education classes was conducted normally. The teachers were given no special instructions or description of the ANS-IE scale or Rotter's social learning theory. Rather, pre and post assessments were administered as opinion surveys and the other demographic data were simply collected.

Measurement of Locus of Control - The Nowicki-Strickland Scale

The adult form of the Nowicki-Strickland Internal-External Scale (ANS-IE, Duke and Nowicki, 1973) is derived from Rotter's theory. The ANS-IE consists of 40 items answered either yes or no. The score equals the number of external responses.

This test is group-referenced and uses the group median to define the cut off between internals and externals. This differs slightly from Rotter's scale which suggests using the mean or average score. Nowicki and Duke have established significant correlations between their scale and Rotter's ranging from .44 to .68. Also, split-half reliability ranged from .74 to .86 with data from 12 separate studies with a total of 766 subjects (Nowicki and Duke, 1974).

RESULTS

An analysis of covariance was conducted to test the significance of the main effects—class membership in the two experimental and one comparison groups—on post ANS-IE scores. Pretest scores on the WRAT math test and the ANS-IE were considered covariants. Main effects were statistically significant for $p > .05$. The means and adjusted means for the post scores on ANS-IE are presented in Table 1.

Table 1. MEANS AND ADJUSTED MEANS FOR THE POST ADMINISTRATION OF THE ANS-IE BY CLASS

CLASS	MEAN	ADJUSTED MEAN	NUMBER OF S's
Comparison	15.88	13.92	16
Contract Learning	10.42	10.73*	12
Teacher Trained	11.63	13.35	16
Total Population	12.84	---	44

*p > .05

Multiple regression was also conducted with completion status identified as the dependent variable. The independent variables tested were pre ANS-IE scores, age, ethnicity, and grade completed in public school. Only two variables were statistically significant in the regression: pre ANS-IE scores and age ($p > .05$).

DISCUSSION

This study supports the proposition that contract learning may have an internalizing effect on adults enrolled in adult education programs. The data indicate that simply training teachers with the concepts of locus of control and with implications for teaching has no impact on developing internality among students.

An investigation by the researchers of the behaviors of both teachers and students who participated in this study raises several questions. One question concerns the positive effects of using learning contracts in adult education classes as opposed to teacher behavior and attitudes toward the student. The use of these contracts (see Appendix A) required the teacher to follow a specific procedure:

(1) Identify small units of learning activities.

(2) Meet individually with each student to jointly set learning objectives.

(3) Specify assignments supporting these objectives.

(4) Evaluate progress immediately upon completion of each objective.

In essence, this procedure required the teacher to individualize instruction. The question is whether the internalizing effect on students in the contract learning classes was due to the contract procedure or the teacher behavior toward the student or both. If indeed the results were due to the teachers' instructional techniques, then the contract learning method might be viewed as an effective means of ensuring individualization and promoting an internal locus of control among students.

The teachers who used learning contracts for math instruction noted several effects on their students. Generally, teachers observed that internal students responded very favorably to use of the contracts while external students often resisted identifying specific learning goals within set time limits and then signing the contract. The resistance of the external students to commit themselves in writing for learning activities may indicate their reluctance to assume responsibility for their own learning.

The correlation of pre ANS-IE scores and completion of adult education classes poses still another question: How could the ANS-IE be used beneficially by adult education teachers? An early assessment of internality/externality with adult students may alert teachers to the instructional and personal needs of their students. Although it is often possible for an instructor to learn these same things about students after several contact hours of teaching and association, the ANS-IE may be an aid to accomplishing this earlier - perhaps before a student drops from the program. As is the case with all assessments, however, care must be taken not to rely too heavily on such scores for predicting success in the program.

The same advantages for using academic assessments were evident. Instructors were able to use results of the WRAT math test or the General Educational Performance Index (GEPI) reading portions to determine the educational needs of their students. In one case this preassessment determined that 10 of 12 students were immediately prepared to take all sections of the GED tests except for math. Without this initial assessment procedure, however, these students would have participated in GED classes for four months before taking the tests. Certainly preassessment in this case was advantageous to the students by providing the instructor with valuable information concerning the capabilities of these students.

Based on the results of this research study and supporting evidence in the literature, the use of asses ments for both academic and personal information aid adult educators in their service to students. It is both presumptuous and unrealistic to assume or estimate the capabilities of students if one is to provide valuable individualized educational opportunities for adults. Access must be made to any information which may contribute to the success of an adult's experience in adult education programs. Valuable information may result from such instruments as the IE scales as well as academic assessments.

Although the study yields empirical evidence supporting the internalizing effects of contract learning techniques in adult education classes, the method should be used on a wider scale to determine if it is equally effective with many different class settings and teachers. Because this study was limited to a three month period, the application of the procedure over a period of a year would better assess its full impact on clientele and programs.

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APPENDIX A
Math Learning Contracts
(A Sample)

9

ARITHMETIC
Fractions

	Goals	Assignments	Check-up	Completed
Naming				
Lowest Terms				
Adding				
Subtracting				
Multiplying				
Changing Forms				
Canceling				
Dividing				
Ratios/Proportions				
Word Problems				

My goal to complete this unit is _____ . (date)

My goal for satisfactory performance is _____ . (%on check-up)

Signature of student _____

Date _____

(This form may be used by teachers to develop contracts for specific learning needs.)

	Goals	Assignments	Check-up	Completed

My goal is to complete this unit by _____ . (date)

My goal for satisfactory performance is _____ . (% on check-up)

Signature of student _____

Date _____